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Skin lesions with white rings

QUESTION: What are the cause and diagnosis of the hypopigmented areas seen around the pigmented lesions in Figures 1 and 2? (Both hyperpigmented areas are approximately 5 to 8 mm in diameter.)

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Figure 1 *Back*

Figure 2 *Upper chest*

ANSWER: The lesions in Figures 1 and 2 are halo nevi. These photographs were taken of halo nevi from two different young women. Both nevi were found on the trunk. They were noted incidentally during physical exams. Neither patient was symptomatic. Figure 3 shows a larger area of the back of the young woman pictured in Figure 1 with a cluster of halo nevi in various different stages. The patient in Figure 2 had a single halo nevus only.

Epidemiology

Halo nevi are principally found on the trunk and may be seen more commonly in adolescents, children, and young adults. A correlation with vitiligo has been reported.[1]

Mechanism

The halo nevus is a curious phenomenon in which there is an immunologic reaction around a nevocellular nevus (a nevus with nevus cells). The depigmented ring is caused by the destruction of melanocytes. Evidence points to the involvement of CD8+ T cells as the potential effectors in the destruction of these melanocytes.[2] The mechanisms responsible for the halo nevus present an interesting link with the immune response to melanoma.[2] Although it has been reported that halo nevi are found in correlation with melanoma at distant sites, there is no firm evidence to support anything but a coincidental link between melanoma and halo nevi.

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Note: If the patient's identity is recognizable, a signed permission form should accompany the submission materials.

Figure 3

Courtesy of Ustine R. Myr, R. Tobinick E, Siegel D. Skin surgery: a practical guide. St. Louis: Mosby-Year Book, Inc.; 1998.

Figure 4

Three stages of the halo nevus (stages 1 and 2 are seen in Figure 3):

1) A white halo develops around the normal brown pigmentation of a benign nevocellular nevus (months).

2) The halo nevus may then progress to a complete loss of pigment, with only the remaining halo visible (months to years).

3) Repigmentation of halo (months to years).[1]

Differential diagnosis

Mooney and colleagues examined the pathology of 142 lesions that were given the clinical or histologic diagnosis of halo nevus. All but 3 were found to be compound, junctional, or intradermal nevi with a broad spectrum of atypia.[3] The halo phenomenon occurs in a wide spectrum of skin lesions, including melanoma, blue nevi, Spitz juvenile nevi, dermatofibroma, and neurofibroma.[1] Halos may also occur around basal cell carcinomas and congenital nevi.[4] Therefore a lesion with a halo should not be regarded as a single clinical or pathological entity. The central lesion should be evaluated and biopsied if there is a suspicion of skin malignancy.

For example, Figure 4 shows a basal cell carcinoma (BCC) with a surrounding halo. The central lesion is a very typical-appearing nodular BCC, with a pearly-white, smooth appearance showing telangiectasias and a loss of the normal pore pattern. Biopsy confirmed the diagnosis of BCC, and the lesion was fully excised with appropriate margins.

Although melanomas can show regression of pigmentation, these lighter areas are irregular and asymmetric. Melanomas that appear to have a halo tend to have an asymmetric halo, and the central pigmented lesion shows a number of the ABCDE criteria (see box). In contradistinction, the usual benign halo nevus tends to a very symmetrical hypopigmented ring around an evenly pigmented, benign-appearing nevus.

Treatment

If a halo nevus appears suspicious for a basal cell carcinoma or a melanoma, it is essential to biopsy the central lesion. Benign-appearing halo nevi as seen in Figures 1 to 3 do not require biopsy. The treatment for both patients in Figures 1 to 3 is reassurance and observation. Any suspicious changes in the central lesion in years to come might prompt a future biopsy.

ABCDE guidelines for diagnosis of melanoma

- **Asymmetry:** Benign nevi are symmetrical; melanomas tend to have pronounced asymmetry.
- **Border:** Benign lesions usually have smooth borders; melanomas tend to have notched, irregular outlines.
- **Color:** Benign lesions usually contain only one color; melanomas frequently have variegated color.
- **Diameter:** Benign pigmented lesions are usually smaller than 6 mm in diameter.
- **Elevation:** A malignant melanoma is almost always elevated, at least in part, so that it is palpable.

References

1 Fitzpatrick TB, Johnson RA, Wolff K, et al. Color atlas and synopses of clinical dermatology. 3rd ed. McGraw-Hill; 1996.
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3 Mooney MA, Barr RJ, Buxton MG. Halo nevus or halo phenomenon? A study of 142 cases. J Cutan Pathol 1995 Aug;22(4):342-348.
4 White G. A color atlas of regional dermatology. Mosby-Wolfe, London; 1994.

Further reading

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